Shaded Relief Visualization Services FAQ

Q: What sources of elevation data were used to create the shaded relief?

A: The large scale shaded relief layers (up to 16 arc-second cell size) are derived from the National Elevation Dataset (NED). The small scale shaded relief layers (30 arc-seconds and larger cell sizes) are derived from the USGS GTOPO30 dataset.

Q: What cell sizes are used to represent the shaded relief?

A: Shaded relief layers from NED are derived from input data that are represented in 1/3, 1, 4, 8, and 16 arc-second cells. The approximate equivalents in meters are 10, 30,120, 240, and 480. The relief layers based on GTOPO30 are represented in 30, 60, and 120 arc-second cells.   The approximate equivalent metric values are 1, 2, and 4 kilometers.

Q: Why does the shaded relief look subdued?

A: This effect was used to make it easier to see other features on the display, such as text and roads. In the same manner, this is in intended to be conducive to making better mash-ups.

Q: What geographic areas does the relief cover at large scales?

A: The Conterminous U.S., Alaska, Hawaii, Puerto Rico, the Territorial Islands, and Mexico.

Q: What parameters were used for the shaded relief (hillshade function)?

A: For the NED 1 and 1/3 arc-second layers, the point illumination is from the NW (azimuth = 315), the altitude of the light source is 45 degrees, and multiplier of .00003 is used to limit the range of the resulting numbers. . For smaller scale data, a multiplier of .00005 was used to slightly exaggerate the range and correct for more generalized topography.

Q: What are the service URLs for the Shaded Relief services?
A: There are currently three services URLs. The first 2 services are small scale that are cached (pre-generated)
http://raster1.nationalmap.gov/ArcGIS/rest/services/TNM_Small_Scale_Shaded_Relief/MapServer
http://raster1.nationalmap.gov/ArcGIS/rest/services/TNM_Medium_Scale_Shaded_Relief/MapServer

The third service is large scale that is dynamic service:
http://raster.nationalmap.gov/ArcGIS/rest/services/TNM_Large_Scale_Shaded_Relief/MapServer